

# **Appendix 8B-1a: Non-ECP Water Quality Sampling Sites, Monitoring Schedule and Flow Volumes**

**Table 1.** Water Quality Monitoring Schedule for Non-ECP Discharge Structures and Additional Upstream Monitoring Locations.

AREA	Non-ECP PERMIT STRUCTURE	WATER QUALITY SAMPLING SITE	WATER QUALITY MONITORING SCHEDULE						WATER QUALITY COMMENTS
			Physical	Nutrients	Major Ions	Trace Metals	Pesticides Water	Pesticides Sediment	
INTO	ACME1DS	ACME1DS	BWF/M	BWF/M	QTR	SA	QTR	SA	
	ACME1 + (Upstream of ACME1DS)	VOW1		Weekly Flowing (autosampler)					Sampling conducted by Village of Wellington. TP collected by autosampler.
	G-94D	G94D	BWF/M	BWF/M	QTR	SA	QTR	SA	
	ACME2 + (Upstream of G94D)	VOW1		Weekly Flowing (autosampler)					Sampling conducted by Village of Wellington. TP collected by autosampler.
	G-123	G123	BWF/M	BWF/M	QTR	SA	QTR	SA	
	S-9	S9	BWF/M	Weekly Flowing (autosampler)	QTR	SA	QTR	SA	TP collected by autosampler.
	S-14	S14	BWF	BWF	QTRF	SAF			
	S-18C	S18C	BWF/M	BWF/M	QTR	SA	QTR	SA	
	S-140	S140	BWF/M	BWF/M	QTR	SA	QTR	SA	TP collected by autosampler, nitrogen species collected by Grab
	S-175	S175	BWF/M	BWF/M	QTR	SA			
	S-190	S190	BWF/M	BWF/M	QTR	SA	QTR	SA	TP collected by autosampler, nitrogen species collected by Grab
	S-332	S332	BWF/M	BWF/M	QTR	SA	QTR	SA	
WITHIN	NSID (S38B)	S38B	BWF	BWF	QTRF	SAF	QTRF	SAF	
	G-64	G64	BWF	BWF	QTRF *				Monitoring Fe, Mg, Ca phased out *
	G-69	G69	BWF	BWF	QTRF *				Monitoring Fe, Mg, Ca phased out *
	G-71, S-346, S-347	S12D	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-10E	S10E	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-141	S34	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-142	S142	BWF/M	BWF/M	QTR *		QTRF	SAF	Monitoring Fe, Mg, Ca phased out *
	S-143	S11A	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-144	S144							Discontinued sampling in favor of surrogate location at S-145 *
	S-145	S145	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-146	S146							Discontinued sampling in favor of surrogate location at S-145 *
	S-151	S151	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
FROM	S-339, S-340	C123SR84	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	G-94A, G-94B, G-94C	G94B	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-31	S31	BWF/M	BWF/M	QTR *		QTR	SA	Monitoring Fe, Mg, Ca phased out *
	S-34	S34	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-38	S38	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-39	S39	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-197	S197	BWF	BWF	QTRF *				Monitoring Fe, Mg, Ca phased out *
	S-333	S333	BWF/M	BWF/M	QTR	SA			
	S-334	S334	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-337	S31	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-343A, S-343B	US41-25	BWF/M	BWF/M	QTR *				Monitoring Fe, Mg, Ca phased out *
	S-344	S344	QTR	QTR	QTR *				Monitoring Fe, Mg, Ca phased out *
C-111 BASIN	S-174 +	S176	BWF/M	BWF/M	QTR	SA	QTR	SA	
	S-177 +	S177	BWF/M	BWF/M	QTR	SA	QTR	SA	
	S-178 +	S178	BWF/M	BWF/M	QTR	SA	QTR	SA	
	S-331 +, S-173	S331-173	BWF/M	BWF/M	QTR	SA			
		S331					QTR	SA	S173 is not listed in Permit, but is adjacent to and flows in same direction as S331

Note: 1) Water quality sample site is located on upstream side of permitted structure, unless otherwise noted with different representative sampling location

2) Structure names with a "+" are upstream of Non-ECP INTO structures and are additional monitoring locations

3) \* indicates monitoring requirement eliminated in the November, 1999 Non-ECP Permit Modification

4) Table Legend:

BWF/M = Biweekly if Flowing/Otherwise Monthly

SA = Semiannually

**Table 2.** Flow volume and annual flow weighted mean TP concentrations for Non-ECP structures during WY2001 (May 1, 2000 through April 30, 2001)

AREA	NON ECP PERMIT STRUCTURE	WATER QUALITY SAMPLING SITE	FLOW		Monthly Flow Volumes (acre-ft) (May 1, 2000 - April 30, 2001)												Total Flow Volume (acre-ft)	Annual Flow Weighted Mean TP (ppb)
			STATION	DBKEY	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
INTO	ACME1DS	ACME1DS	n/a	n/a	See flow data from ACME 1												n/a	107
	ACME1 + (Upstream of ACME1DS)	VOW1	ACME1	15022	29	0	1,070	1,269	842	2,302	140	285	0	0	271	45	6,252	65
	G-94D	G94D	n/a	n/a	See flow data from ACME 2												n/a	169
	ACME2 + (Upstream of G94D)	VOW2	ACME2	15023	0	0	1,235	1,269	949	3,197	332	336	0	0	375	3	7,695	117
	G-123	G123	G123_P	K	0	0	1,846	1,412	8,053	10,794	1,240	5,637	0	0	5,217	4,180	38,379	13
	S-9	S9	S9_P	15015	1,154	14,091	44,898	25,772	22,183	41,175	3,466	8,497	3,617	0	7,191	126	172,170	23
	S-14	S14	S14_C	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	NPF
	S-18C	S18C	S18C_S	15760	612	8,995	21,128	31,268	31,911	46,380	4,285	6,958	157	2	0	0	151,696	9
	S-140	S140	S140_TOT	06754	44	5	2,366	5,359	15,572	36,863	2,698	0	18	0	1	0	62,927	144
	S-175	S175	S175_C	15752	0	5	0	0	1	271	0	0	0	0	0	0	278	6
	S-190	S190	S190_S	15987	3	0	364	835	3,626	31,996	457	0	0	0	1	3	37,285	177
	S-332	S332	S332_P	15753	1,024	304	46	1	0	0	1	1	0	0	0	0	1,377	12
	NSID (S38B)	S38B	NSPRNG_C2	15121	0	0	258	166	718	1,270	0	0	0	0	0	0	2,412	16
WITHIN	G-64	G64	G64_C	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	G-69	G69	G69_C	K5484	6	0	0	0	0	0	0	0	0	0	0	0	6	NPF
	G-71, S-346, S-347	S12D	S12D_S	FE774	0	0	1,131	12,173	4,568	32,270	19,962	6,310	3,027	413	0	0	79,852	14
	S-10E	S10E	S10E_C	16228	6	0	0	0	0	0	0	0	0	0	0	0	6	NPF
	S-141	S34	S141_W	K5493	0	0	0	0	0	-1,176	36	0	0	0	0	0	-1,139	NPF
	S-142	S142	S142_C	F9554	0	0	-1,245	926	-4,396	-6,329	992	-1,260	-1,263	-2,765	-1,942	-4,585	-21,866	22
	S-143	S11A	S143_C	JM599	21,610	0	0	0	0	0	0	0	0	0	0	0	21,610	25
	S-144	S144	S144_C	15751	4,358	1,399	1,660	0	0	8,295	3,182	0	0	0	0	0	18,894	9
	S-145	S145	S145_C	15605	6,330	3,527	2,951	0	0	9,408	3,708	0	0	0	0	0	25,924	8
	S-146	S146	S146_C	15608	4,010	-1,131	715	0	0	7,816	1,493	0	0	0	0	0	12,903	8
	S-151	S151	S151_C	15550	38,657	20,452	13,009	0	0	0	0	0	1,283	13,748	10,986	5,869	104,003	35
	S-333	S333	S333_S	15042	21,631	11,776	8,509	4,402	7,158	1,386	19,841	9,162	3,709	490	0	2,378	90,444	21
	S-339	C123SR84	S339_S	15563	41,662	28,680	0	0	0	0	0	0	0	0	0	6,201	76,543	100
	S-340	C123SR84	S340_S	15666	30,043	15,364	2,954	2,363	2,490	2,084	1,943	2,170	2,340	2,338	2,783	2,577	69,449	91

Note: 1) Water quality sample site is located on upstream side of permitted structure, unless otherwise noted with different sampling location

2) n/a indicates that flow and/or stage data is Not Available, or that structure is not appropriately instrumented to capture information.

3) Structure names with a "+" are upstream of Non-ECP INTO structures and are additional monitoring locations

4) ACME1DS and G-94D are not instrumented for flow calculation. Flow-weighted mean TP concentration was determined by considering the TP data from these sites with the flow data from the upstream pump stations (ACME 1 and ACME 2, respectively)

5) G-123 structure is not monitored for flow (reported volume is an estimate). Arithmetic Mean TP was calculated by considering all samples collected.

6) S-14 is not instrumented for flow calculation. However operational records indicate no operation during the water year.

7) NPF indicates either structure closed or that no positive flow was recorded on sampling days, thus a flow-weighted mean could not be calculated

**Table 2.** (Continued) Flow volume and annual flow weighted mean TP concentrations for Non-ECP structures during WY2001 (May 1, 2000 through April 30, 2001)

AREA	NON ECP PERMIT STRUCTURE	WATER QUALITY SAMPLING SITE	FLOW		Monthly Flow Volumes (acre-ft) (May 1, 2000 - April 30, 2001)												Total Flow Volume (acre-ft)	Annual Flow Weighted Mean TP (ppb)
			STATION	DBKEY	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
FROM	G-94A	G94B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	G-94B	G94B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	G-94C	G94B	G94C_C	MW385	139	0	0	2,666	5,728	1,718	13,561	1,263	0	0	-2,698	0	22,377	n/a
	S-31	S31	S31_C	06786	10,917	0	0	0	0	0	0	19	71	0	0	0	11,008	38
	S-34	S34	S34_C	15954	20,151	0	0	0	0	0	0	0	0	0	0	0	20,151	45
	S-38	S38	S38_C	06760	14,900	5,162	0	456	195	1,024	6,936	4,761	6,146	3,781	0	0	43,362	8
	S-39	S39	S39_S	06733	30,667	3,530	108	473	21	0	1,957	2,846	1,624	5,746	1,554	86	48,610	35
	S-197	S197	S197_C	13092	0	0	0	0	1,273	24,220	0	0	0	0	0	0	25,493	12
	S-334	S334	S334_S	DJ186	2,100	79	6	3	0	0	0	0	0	0	0	0	2,188	18
	S-337	S31	S337_C	06896	10,917	0	0	0	0	0	0	19	71	0	0	0	11,008	36
	S-343A	US41-25	S343A_C	16193	0	0	0	0	0	0	0	0	0	0	0	0	0	NPF
	S-343B	US41-25	S343B_C	16196	0	0	0	0	0	0	0	0	0	0	0	0	0	NPF
	S-344	S344	S344_C	16199	0	0	0	0	0	0	0	0	0	0	0	0	0	NPF
C-111 BASIN	S-174 +	S176	S174_S	12289	6,303	58	79	0	0	-26	319	590	230	1,194	139	-82	8,804	10
	S-177 +	S177	S177_S	13156	5,588	6,242	17,760	27,413	27,108	41,061	2,151	3,889	511	3,235	1,694	1,444	138,099	15
	S-178 +	S178	S178_C	03952	0	0	0	0	0	958	0	0	0	0	0	0	958	NPF
	S-331 +	S331-173	S331_P	15722	4,619	1,152	29,800	27,568	27,472	33,719	13,715	1,920	1,599	16,748	0	0	158,310	10
	S-173 +	S331-173	S173_C	15830	8,221	4,264	1,205	0	119	211	3,805	3,013	6,912	2,174	6,948	7,213	44,086	

Note: 1) Water quality sample site is located on upstream side of permitted structure, unless otherwise noted with different sampling location  
2) n/a indicates that flow and/or stage data is Not Available, or that structure is not appropriately instrumented to capture information.  
3) Structure names with a "+" are upstream of Non-ECP INTO structures and are additional monitoring locations  
4) G-94A, G-94B, G-94C are not instrumented for flow calculations. Estimate provided for March 2001 when G-94C backflowed into WCA-1.  
5) S-331 and S-173 flow records were combined to determine the annual flow weighted mean TP  
6) NPF indicates either structure closed or that no positive flow was recorded on sampling days, thus a flow-weighted mean could not be calculated

**Table 3.** Daily discharge and TP concentrations for G94C structure during March and April 2001

<b>Date</b>	<b>Duration opened (hrs)</b>	<b>Instantaneous Discharge (cfs)</b>	<b>Daily Discharge (cfs)</b>	<b>TP Concentration (µg/L)</b>
3/18	0	0	<b>0</b>	no sample
3/19	13	485	<b>260</b>	898
3/20	15.25	313	<b>200</b>	no sample
3/21	12	263	<b>130</b>	no sample
3/22	24	242	<b>240</b>	no sample
3/23	24	213	<b>210</b>	no sample
3/24	24	210	<b>210</b>	no sample
3/25	8	205	<b>70</b>	no sample
3/26-3/28	0	0	<b>0</b>	no sample
3/29	4	256	<b>40</b>	no sample
3/30-4/4	0	0	<b>0</b>	no sample
4/5	0	0	<b>0</b>	310
4/6-4/9	0	0	<b>0</b>	0
4/10	0	0	<b>0</b>	227

- Notes:
- 1) Daily discharge values are estimated to be within "+ or -" 10% accuracy
  - 2) TP grab value collected 3/19/01 @15:30
  - 3) Direction of flow between 3/19-3/29/01 is from Lake Worth Drainage District to the WCA-1 (ARM Loxahatchee Wildlife Refuge)
  - 4) Multiply Daily Discharge in CFS by 1.9835 to get ACRE-FEET/Day
  - 5) Daily Discharge = (Duration Opened x Instantaneous Discharge)/24